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## NOTICE OF ALLOWANCE AND FEE(S) DUE

50488

7590

08/21/2009

ALLEMAN HALL MCCOY RUSSELL & TUTTLE LLP  
806 SW BROADWAY  
SUITE 600  
PORTLAND, OR 97205-3335

EXAMINER

ANDERSON, FOLASTADE

ART UNIT

PAPER NUMBER

3623

DATE MAILED: 08/21/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,213	09/19/2003	Herb Sorensen	SNS307	7032

TITLE OF INVENTION: SHOPPING ENVIRONMENT ANALYSIS SYSTEM AND METHOD WITH NORMALIZATION

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/23/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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50488 7590 08/21/2009

**ALLEMAN HALL MCCOY RUSSELL & TUTTLE LLP**  
**806 SW BROADWAY**  
**SUITE 600**  
**PORTLAND, OR 97205-3335**

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,213	09/19/2003	Herb Sorensen	SNS307	7032

**TITLE OF INVENTION: SHOPPING ENVIRONMENT ANALYSIS SYSTEM AND METHOD WITH NORMALIZATION**

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/23/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
ANDERSON, FOLASHADE	3623	705-010000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
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3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date \_\_\_\_\_

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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ALLEMAN HALL MCCOY RUSSELL & TUTTLE LLP  
806 SW BROADWAY  
SUITE 600  
PORTLAND, OR 97205-3335

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1103 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1103 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/667,213

**Examiner**

FOLASHADE ANDERSON

**Applicant(s)**

SORENSEN, HERB

**Art Unit**

3623

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendments filed 05/04/2009.
2. ☒ The allowed claim(s) is/are 1,3-5,9,12-26 and 28-50.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Folashade Anderson/  
Examiner, Art Unit 3623

/Beth V. Boswell/  
Supervisory Patent Examiner, Art Unit 3623

#### **DETAILED ACTION**

1. Currently, claims 1, 3-5, 9, 12-26, 28-40, and 41-50 are pending. Claims 2, 6-8, 10, 11, and 27 are canceled. Claims 1, 3, 12, 13, 20, 22, 25, 28, 30-35, 37, and 41 are amended

#### ***Response to Amendment***

2. The 35 USC 101 rejection made in the previous office action with respect to claims 1-5 and 6-40 is now withdrawn in light of the amendments.

#### ***EXAMINER'S AMENDMENT***

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
4. Authorization for this examiner's amendment was given in a telephone interview with Mark Alleman, registration number 42,257, on 07/20/2009. It is further noted that additional amendments were agreed to via a series of conversation that took place at various times from 07/22/2009 until 07/23/2009 with Jason Creasman, registration number 51,587. The application has been amended as follows:

#### **In the claims**

1. (Currently amended) A computer-implemented method for analyzing a shopping environment, the method comprising the steps of analyzing shopper data

**from a plurality of different shopping environments having different sizes and shapes by:**

tracking a plurality of paths of a plurality of persons in **each of the plurality of shopping environments, via a shopper tracking module executed on a computing device and an associated tracking system installed in each shopping environment;**

recording corresponding path data **indicating the plurality of paths from the different shopping environments, in a database associated with the computing device, wherein the path data for each path includes position data representing a series of tracked positions of a person in the shopping environment, and associated time data representing a corresponding series of times at which the person was tracked in each position;**

normalizing the path data for each path by use of a predetermined normalization function **including to convert the path position data from the different shopping environments into a common physical frame of reference, thereby producing normalized position data for the paths from the different shopping environments, by a normalization module executed on the computing device, wherein normalizing further includes determining a standardized shopping environment including sectors and/or standardized shopping environment dimensions, and converting the path data from each of the plurality of shopping environments to the standardized shopping environment by scaling the path position data to the standardized shopping environment dimensions and/or sectors;**

calculating a predetermined statistical measure of a predetermined shopper behavior or non-shopper behavior from [[of]] the normalized path data, by a statistical calculation module executed on the computing device, wherein calculating includes examining normalized path data of one or more paths from each of the shopping environments to determine the predetermined statistical measure; and

producing an output ~~based upon~~ indicating the predetermined statistical measure of the shopper behavior or the non-shopper behavior calculated from the normalized path data from the plurality of shopping environments, by the computing device.

2. (Cancelled)

3. (Currently amended) The method of claim [[2]]1, wherein the step of normalizing includes time adjusting the time data for each path to a common time reference.

4. (Original) The method of claim 3, wherein the step of time adjusting further includes the step of time shifting the time data for each path to a common starting time.

5. (Original) The method of claim 3, wherein the step of time adjusting further includes the step of time scaling the time data for each path to a common duration.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Previously presented) The method of claim 1, wherein each of the plurality of shopping environments has a longitudinal dimension and a length, a lateral dimension and a width, and the position data for each path includes a plurality of longitudinal and lateral coordinate values, and the step of converting the position data to a standardized frame of reference further includes dividing each longitudinal coordinate value by the length for the corresponding shopping environment, and dividing each lateral coordinate value by the width for the corresponding shopping environment.

10. (Cancelled)

11. (Cancelled)

12. (Currently amended) The method of claim ~~[[2]]~~1, further comprising establishing a calibration for the time data and a calibration for the position data.



13. (Currently amended) The method of claim ~~[[2]]~~1, wherein the predetermined normalization function includes determining a proportion of the path completed.

14. (Original) The method of claim 13, wherein the proportion is calculated with respect to a distance traveled by the person along the path.

15. (Original) The method of claim 13, wherein the proportion is calculated with respect to a time elapsed while the person traveled the path.

16. (Original) The method of claim 13, wherein the proportion is calculated with respect to cumulative purchases made while the person traveled the path.

17. (Original) The method of claim 1, wherein the step of calculating includes calculating a master path based on a plurality of the paths tracked in the shopping environment.

18. (Original) The method of claim 17, wherein the shopping environment has a longitudinal dimension, and each path has a plurality of longitudinal coordinate values, and wherein the calculation of the master path includes averaging longitudinal coordinate values of corresponding points of each path to obtain corresponding average longitudinal coordinate values.

19. (Original) The method of claim 17, wherein the shopping environment has a lateral dimension, and each path has a plurality of lateral coordinate values, and wherein the calculation of the master path includes averaging lateral coordinate values of corresponding points of each shopping path to obtain corresponding average lateral coordinate values.

20. (Currently amended) The method of claim ~~[[2]]~~1, wherein the step of calculating includes calculating density of a plurality of persons tracked throughout at least a portion of one or more shopping environments.

21. (Original) The method of claim 20, wherein the density is based on normalized data received from a plurality of shopping environments.

22. (Currently amended) The method of claim ~~[[2]]~~1, wherein the step of calculating includes calculating flow of a plurality of persons traveling throughout at least a portion of one or more shopping environments.

23. (Original) The method of claim 22, wherein the flow is based on normalized data received from a plurality of shopping environments.

24. (Original) The method of claim 22, wherein the shopping environment has a longitudinal dimension and a lateral dimension, and each shopping path has a plurality of longitudinal coordinate values and a plurality of lateral coordinate values, and wherein the step of calculating further includes, for each shopping path, associating with each selected time a velocity.

25. (Currently amended) The method of claim ~~[[2]]~~1, wherein the step of calculating includes calculating shopping intensity of a plurality of shoppers traveling throughout at least a portion of a shopping environment.

26. (Previously presented) The method of claim 25, wherein the shopping intensity is based on normalized product purchase data received from a plurality of shopping environments.

27. (Cancelled)

28. (Currently amended) The method of claim ~~[[27]]~~1, wherein the shopping environment is partitioned into five sectors.

29. (Original) The method of claim 28, wherein the shopping environment has four sides, four corners, and a center, four of the sectors are substantially trapezoidal in shape having two sloping sides and a longer and a shorter of two substantially parallel

sides, and the remaining sector is substantially rectangular in shape and having four sides and a center, the sloping sides of the four substantially trapezoidal sectors coinciding with segments of diagonal lines from opposite corners of the shopping environment, the longer of the two substantially parallel sides of each substantially trapezoidal sector coinciding with a side of the shopping environment, and the shorter of the two substantially parallel sides of each substantially trapezoidal sector forming a side of the remaining, substantially rectangular, sector, with the center of the substantially rectangular sector coincident with the center of the shopping environment.

30. (Currently amended) The method of claim [[27]]1, wherein the shopper behavior is visiting a predetermined region of the shopping environment corresponding to the sector of the standardized shopping environment.

31. (Currently amended) The method of claim [[27]]1, wherein the shopper behavior is slowing below a predetermined threshold speed in a predetermined region of the shopping environment corresponding to the sector of the standardized shopping environment.

32. (Currently amended) The method of claim [[27]]1, wherein the shopper behavior is purchasing a product from a predetermined region of the shopping environment corresponding to the sector of the standardized shopping environment.

33. (Currently amended) The method of claim [[27]]1, wherein the non-shopper behavior is visiting a predetermined region of the shopping environment corresponding to the sector of the standardized shopping environment,

34. (Currently amended) The method of claim [[27]]1, wherein the step of calculating a predetermined statistical measure further includes determining a best fit ellipse to encompass a predetermined percentage of the shopper behavior or non-shopper behavior.

35. (Currently amended) The method of claim [[27]]1, wherein the predetermined statistical measure is percentage of trip completion.

36. (Original) The method of claim 35, wherein the output includes a contour plot of percentage of trip completion for a plurality of paths.

37. (Currently amended) The method of claim [[2]]1, wherein the step of calculating further includes the steps of:

calculating a length of the shopping path;

smoothing the shopping path to obtain a smoothed path;

calculating a length of the smoothed path; and

comparing the length of the smoothed path with the length of the shopping path.

38. (Original) The method of claim 1, wherein the plurality of persons include a plurality of shoppers.

39. (Original) The method of claim 1, wherein the plurality of persons includes a plurality of non-shoppers.

40. (Original) The method of claim 1, wherein the plurality of persons includes shoppers and non-shoppers, and the step of calculating a statistical measure includes calculating a statistical measure based on shopper path data and non-shopper path data, the method further comprising, comparing the calculated statistical measures of the shoppers and non-shoppers.

41. (Currently amended) A system for use in analyzing a shopping environment, the system comprising:

a computing device including a processor and memory holding instructions executable by the processor, when executed by the processor, the instructions causing the computing device configured to receive path data corresponding to a plurality of persons tracked in ~~one or more~~ a plurality of shopping environments of different shapes and sizes, the path data including position data and time data, ~~[[and]]the instructions including~~ execute an analysis program having a normalization module and a statistical calculation module;

wherein the normalization module is configured to convert the path data to a common time frame of reference and a common physical frame of reference, to thereby produce normalized path data **based on the path data from the plurality of shopping environments of different shapes and sizes**; and

wherein the statistical calculation module is configured to calculate a predetermined statistical measure based on the normalized path data **to be output by the computing device**.

42. (Original) The system of claim 41, further comprising a shopper tracking module configured to receive shopper path data from a tracking system.

43. (Original) The system of claim 42, wherein the tracking system includes sensors configured to track shopper tags throughout each of the shopping environments, to thereby produce the shopper path data.

44. (Original) The system of claim 41, further comprising a non-shopper tracking module configured to receive non-shopper path data from a tracking system.

45. (Original) The system of claim 44, wherein the tracking system includes sensors configured to track non-shopper tags throughout each of the shopping environments, to thereby produce the non-shopper path data.

46. (Original) The system of claim 41, further comprising a product tracking module configured to receive product path data from a tracking system.

47. (Original) The system of claim 46, wherein the tracking system includes sensors configured to track product tags throughout each of the shopping environments, to thereby produce the product path data.

48. (Previously presented) The system of claim 41, further comprising an environment tracking module configured to receive movable fixture path data from a tracking system.

49. (Original) The system of claim 48, wherein the tracking system includes sensors configured to track environment tags throughout each of the shopping environments, to thereby produce the movable fixture path data.

50. (Original) The system of claim 41, wherein the predetermined statistical measure is selected from the group consisting of average shopper depth, average shopper right-left position, average shopper path, average shopper density, average shopper velocity, shopping intensity, percent of trip completed, average non-shopper depth, average non-shopper right-left position, average non-shopper path, average non-shopper density, average non-shopper velocity.



***Reasons for Allowance***

5. Currently, claims 1, 3-5, 9, 12-26, 28-40, and 41-50 are allowed.
6. The following is an examiner's statement of reasons for allowance:

With respect to independent claim 1, which recites the novel limitations of "normalizing the path data for each path by use of a predetermined normalization function to convert path position data from the different shopping environments into a common physical frame of reference, thereby producing normalized position data for the paths from the different shopping environments, by a normalization module executed on the computing device, wherein normalizing further includes determining a standardized shopping environment including sectors and/or standardized shopping environment dimensions, and converting the path data from each of the plurality of shopping environments to the standardized shopping environment by scaling the path position data to the standardized shopping environment dimensions and/or sectors; calculating a predetermined statistical measure of a predetermined shopper behavior or non-shopper behavior from the normalized path data, by a statistical calculation module executed on the computing device, wherein calculating includes examining normalized path data of one or more paths from each of the shopping environments to determine the predetermined statistical measure; and producing an output indicating the predetermined statistical measure of the shopper behavior or the non-shopper behavior calculated from the normalized path data from the plurality of shopping environments, by the computing device."

With respect to independent claim 41 which recites the novel limitations of instructions including an analysis program having a normalization module and a statistical calculation module; wherein the normalization module is configured to convert the path data to a common time frame of reference and a common physical frame of reference, to thereby produce normalized path data based on the path data from the plurality of shopping environments of different shapes and sizes.

The prior art of record most closely resembling Applicant's claimed invention are Farley et al (A Stochastic Model of Supermarket Traffic Flow, published 1966) and Heller (Tracking Shoppers through the Combination Store, published 1988). Farley teaches a method for modeling supermarket traffic flow to determine traffic patterns in a given store as well as in a hypothetical store layout. The portions of Farley that relate to the instant claim language are: "[t]he variable is then normalized by the sum of forces of feasible transitions so that it represents the proportion of the total attraction exerted on an area through each area adjacent to it," p. 559, where the attraction is described as "to reach the area he want to go to from the one in which he happens to find him [he must trace a path]," p.557. "Thus two type of aggregated measures . . . set up the particular patterns they follow: (1) what influence does a given area have on any other area in the store, and (2) how is this influence channeled into a direct effect on movement between adjacent areas," p. 558. Farley further teaches "[a]ggregating over sequences produced the matrix of dependent variables – the conditional probabilities of going to area j given shoppers are in area i," p.562. And finally Farley teaches "the Boston transactions observed on a variety of dissimilar layouts produce predictive

structures very similar to those derived on actual data for the Pittsburg stores in directional evidence that the impulse component of transactions has a second order effect on transition probabilities," p. 566.

Heller teaches a method of tracking shoppers through various store layout to determine the best store lay-out. The relevant portions of Heller teach "penetration is the measure of percentage of total customers who pass any particular department or place in the store," p. 49. Thus Heller has previously determined the department penetration, predetermined measure of shopper's behavior as shown in his penetration chart, seen below, p.49.

Department Penetration (% passing)					
Department averages:	Store 1	Store 2	Store 3	Store 4	Four-store average
All peripherals					
aisles average:	72.5%	63.3%	62.8%	69.3%	68.2%
Produce	89	70	73	86	79.5
Deli	90	38	69	44	60.3
Dairy	76	70	61	77	71.0
Bakery	73	60	47	72	63.0
Meat	75	89	79	74	79.3
Flowers/ice cream	62	53	48	63	56.5
All grocery					
aisles average:	41.8	47.3	29.3	36.2	38.6
All non-foods					
aisles average:	16.0	22.6	23.2	10.1	18.0
Other departments:					
Bulk	52	---	---	38	35.0
Cosmetics	39	20	13	26	24.3
Pharmacy	5	36	9	23	17.3
Videotape rental	7	3	13	28	13.3
Store average:	39.3	39.6	33.6	29.7	35.6

Farley and Heller fail to teach normalization of shopper paths from differently shaped stores to a common physical frame of reference, thereby producing normalized position data for the paths from the different shopping environments. Nor do they expressly or implicitly teach converting the path data from each of the plurality of shopping

environments to the standardized shopping environment by scaling the path position data to the standardized shopping environment dimensions and/or sectors.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FOLASHADE ANDERSON whose telephone number is (571)270-3331. The examiner can normally be reached on Monday through Thursday 8:00 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Folashade Anderson/  
Examiner, Art Unit 3623

/Beth V. Boswell/  
Supervisory Patent Examiner, Art Unit 3623